



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/583,936

07/11/2007

Erwin Oser

5151-18PUS

4402

27799

7590

06/30/2009

COHEN, PONTANI, LIEBERMAN & PAVANE LLP  
551 FIFTH AVENUE  
SUITE 1210  
NEW YORK, NY 10176

EXAMINER

JETTON, CHRISTOPHER M

ART UNIT

PAPER NUMBER

3748

MAIL DATE

DELIVERY MODE

06/30/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/583,936	<b>Applicant(s)</b> OSER ET AL.	
	<b>Examiner</b> CHRISTOPHER JETTON	<b>Art Unit</b> 3748	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 July 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 31-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 31-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/22/2006, 2/5/2007</u> .                                     | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the heat pump must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 31-43, 46, 47, 49-56, and 58-60** are rejected under 35 U.S.C. 102(b) as being anticipated by **Lazarevich (US 4,848,088)**.

**Regarding claims 31-34, 54-56, and 58-60**, Lazarevich discloses expanding an evaporated working fluid using a low-pressure expansion device (Fig 1, 202) connected with an evaporator (101) to form an expanded evaporated working fluid, and recycling energy contained in the expanded evaporated working fluid into the evaporator such that the recycled energy is utilized to evaporate additional working fluid (Col 3 Line 62-65). The working fluid is a mixture including a first component and a second component, said method further comprising absorbing, by an absorption fluid, a portion of the first component at least one of in or downstream of the low-pressure expansion device, and transferring recyclable heat to the remaining evaporated second component during said step of absorbing (Col 4 Lines 5-37).

**Regarding claim 35**, Lazarevich discloses the heat transferred to the second component in said step of transferring heats the second component remaining evaporated to a temperature above the boiling point of the mixture,

Art Unit: 3748

and wherein said step of transferring recyclable heat comprises condensing the second component in a heat exchanger (Col 4 Lines 5-14).

**Regarding claims 36-39**, Lazarevich discloses transforming the expanded, evaporated working fluid to a temperature level above the boiling point of the working fluid by a heat pump (Col 4 Lines 1-4).

**Regarding claims 40-43**, Lazarevich discloses the working fluid is a solvent mixture comprising organic and/or inorganic solvent components (Col 4 Lines 15-21).

**Regarding claims 46, 47, and 49-53**, Lazarevich discloses the first component is absorbed in an absorption device arranged downstream of the low-pressure expansion device (Fig 1).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 44, 45, and 57** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lazarevich (US 4,848,088) in view Lawheed (US 2003/0172654 A1)**.

**Regarding claims 44, 45, and 57**, Lazarevich fails to disclose the low-pressure expansion device is a roots blower.

Lawheed teaches a roots blower (Fig 3-6).

It would have been obvious to one of ordinary skill in the art to modify Lazarevich's invention with the roots blower taught by Lawheed since the device is better at converting low temperature thermal energy in a cost effective way.

**Claim 48** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Lazarevich (US 4,848,088) in view Kim (US 6,237,340)**.

**Regarding claim 48**, Lazarevich fails to disclose absorption device comprises an electrolysis device.

Kim teaches a method for reusing substance's thermal expansion energy wherein the first given thermal expansion energy can be reused by repeating chemical bonding and electrolysis of a substance is based on raising a first given thermal energy by using chemical bonding in addition to the principle that the substance absorbs heat as its volume increases but emits heat as the volume decreases (Abstract).

It would have been obvious to one of ordinary skill in the art to modify Lazarevich's invention with the electrolyzer taught by Kim. The electrolyzer would increase the available energy in the system, and therefore, raise the efficiency.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lohmiller (US 4292808), Ishida et al (US 5007240),

Art Unit: 3748

Brinkerhoff (US 4195485), Hashiguchi (US 5754613), Katayama (US 6460338 B1), Roe (US 1961787).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER JETTON whose telephone number is (571)270-7108. The examiner can normally be reached on Monday through Friday, 7:00AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571)272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas E. Denion/  
Supervisory Patent Examiner, Art Unit 3748

/CHRISTOPHER JETTON/  
Examiner, Art Unit 3748